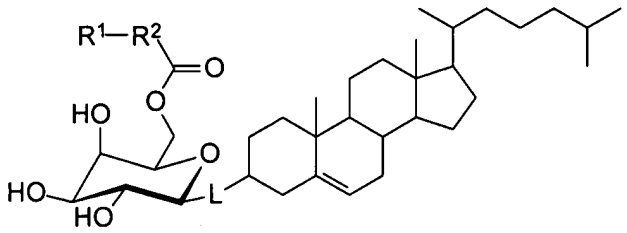
Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A compound of formula A below, or a pharmaceutically acceptable salt ~~or complex~~ thereof, wherein the compound of formula A comprises



wherein R^1 is selected from azido, amino, substituted amino, hydrazino, hydrazide, semicarbazide, or carbohydrazide;

R^2 is selected from a saturated or unsaturated carbon chain containing 1 to 25 carbon atoms, or a saturated or unsaturated substituted carbon chain containing 1 to 25 carbon atoms; and

L is selected from O, N, S, P, or an alkylene radical.

2. (Original) The compound of claim 1, wherein R^1 is selected from azido, amino or hydrazide; R^2 is a saturated or unsaturated carbon chain containing 5 to 20 carbon atoms; and L is O.

Claim 3 (Canceled).

4. (Original) The compound of claim 1, wherein L is O.

5. (Original) A conjugate comprising the compound of claim 1 and at least one protein carrier, wherein the compound of claim 1 is covalently bound to the protein carrier.

6. (Original) A conjugate comprising the compound of claim 2 and at least one protein carrier, wherein the compound of claim 2 is covalently bound to the protein carrier.

7. (Original) The conjugate of claim 5, wherein the compound of claim 1 is covalently bound to the protein carrier via the R^1 group.

8. (Original) The conjugate of claim 6, wherein the compound of claim 2 is covalently bound to the protein carrier via the R^1 group.

9. (Previously presented) The conjugate of claim 5, wherein the protein carrier comprises bovine serum albumin, ovalbumin, keyhole limpet hemocyanin, purified protein derivative of tuberculin, tetanus toxoid, cholera toxoid, diphtheria toxoid, *Pseudomonas aeruginosa* toxoid, *Clostridium* toxoid, Shiga toxin, hepatitis B antigen, or a sequence of amino acids of a *Borrelia burgdorferi* polypeptide.

10. (Previously presented) The conjugate of claim 6, wherein the protein carrier comprises bovine serum albumin, ovalbumin, keyhole limpet hemocyanin, purified protein derivative of tuberculin, tetanus toxoid, cholera toxoid, diphtheria toxoid, *Pseudomonas aeruginosa* toxoid, *Clostridium* toxoid, Shiga toxin, hepatitis B antigen, or a sequence of amino acids of a *Borrelia burgdorferi* polypeptide.

11. (Original) A method for making the compound of claim 1, wherein R^1 is azido and L is O, the method comprising:

reacting a galactosyl halide with cholesterol to provide a galactosyl-cholesterol; and

reacting an azidoacyl acid with the galactosyl-cholesterol to provide the compound of claim 1.

12. (Original) A pharmaceutical composition comprising a therapeutically effective amount of the compound of claim 1 and a pharmaceutically acceptable carrier.

13. (Original) A pharmaceutical composition comprising a therapeutically effective amount of the compound of claim 2 and a pharmaceutically acceptable carrier.

14. (Original) A pharmaceutical composition comprising a therapeutically effective amount of the conjugate of claim 5.

15. (Original) A pharmaceutical composition comprising a therapeutically effective amount of the conjugate of claim 6 and a pharmaceutically acceptable carrier.

16. (Original) A method of inducing an immune response to *B. burgdorferi* in a subject, comprising administering a therapeutically effective amount of the compound of claim 1 to the subject, thereby inducing the immune response.

17. (Original) A method of preventing or treating Lyme disease in a subject, comprising administering to a subject a therapeutically effective amount of the compound of claim 1, thereby preventing or treating Lyme disease in the subject.

Claims 18-31 (Canceled).

32. (Currently amended) The compound of claim 2, wherein R^1 is azido, and R^2 is a saturated carbon chain containing 5 to 20 carbon atoms.

33. (Previously presented) A conjugate comprising the compound of claim 32 and at least one protein carrier, wherein the compound of claim 32 is covalently bound to the protein carrier via the R^1 group.

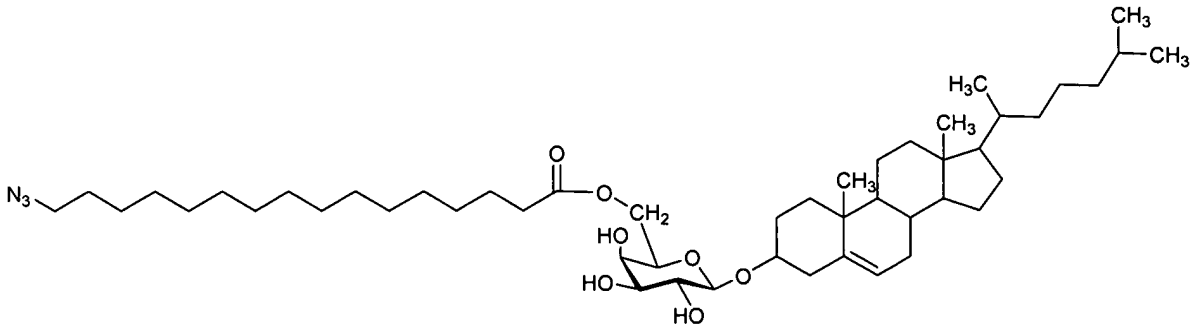
34. (Previously presented) The method of claim 16, wherein L is O.

35. (Previously presented) The method of claim 34, wherein R^1 is selected from azido, amino or hydrazide; and R^2 is a saturated or unsaturated carbon chain containing 5 to 20 carbon atoms.

36. (Previously presented) The method of claim 17, wherein L is O.

~~35.~~ 37. (Currently amended) The method of claim ~~35~~ 36, wherein R^1 is selected from azido, amino or hydrazide; and R^2 is a saturated or unsaturated carbon chain containing 5 to 20 carbon atoms.

~~36.~~ 38. (Currently amended) A compound, or a pharmaceutically acceptable salt ~~or complex~~ thereof, having a structure represented by the formula:



~~37.~~ 39. (Currently amended) A conjugate comprising the compound of claim ~~36~~ 38 and at least one protein carrier, wherein the compound of claim ~~36~~ 38 is covalently bound to the protein carrier.

~~38.~~ 40. (Currently amended) A method of inducing an immune response to *B. burgdorferi* in a subject, comprising administering a therapeutically effective amount of the compound of claim ~~36~~ 38 to the subject, thereby inducing the immune response.

41. (New) The compound of claim 2, wherein R^1 is azido, and R^2 is a saturated or unsaturated carbon chain containing 11, 13, 15 or 17 carbon atoms.

42. (New) A method of inducing an immune response to *B. burgdorferi* in a subject, comprising administering a therapeutically effective amount of the conjugate of claim 39 to the subject, thereby inducing the immune response.

43. (New) A pharmaceutical composition comprising a therapeutically effective amount of the compound of claim 38.